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Mechanisms of exchange interactions in some transition metal carboxylates, sulfates, and chlorides

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Abstract

Experimental data on magnetic properties of dimeric carboxylates, [LM(OOCR)2]2, and polymeric sulfates (N2H5)2M(SO4)2 and chlorides AMCl3, where M is a transition metal, are analyzed using the exchange channel model described elsewhere. The model is shown to readily explain considerable variations of exchange parameters in the carboxylate series (M = Ti(III), V(III), Mn(II), Ni(II), and Cu(II)). Analysis of exchange parameter values reveals that only little exchange occurs across the M-O-S-O-M π-system in metal sulfates. Evidence is presented of direct exchange in the chlorides, AMCl3. © 1977 Springer-Verlag.

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Keywords

Exchange interactions in isostructural series